REMARKS

The present Amendment amends claims 1, 3, 5, 6, 9 and 13, leaves claims 7, 8 and 10 unchanged, and cancels claim 2. Therefore, the present application has pending claims 1, 3, 5-10 and 13.

35 U.S.C. §103 Rejections

Claims 1-3 and 5-10 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,731,600 to Patel et al. ("Patel") in view of U.S. Patent No. 6,690,646 to Fichou et al. ("Fichou"). As previously indicated, claim 2 was canceled. Therefore, this rejection regarding claim 2 is rendered moot. This rejection regarding the remaining claims 1, 3, 5-10 and 13 is traversed for the following reasons. Applicants submit that the features of the present invention, as now more clearly recited in claims 1, 3, 5-10 and 13, are not taught or suggested by Patel or Fichou, whether taken individually or in combination with each other in the manner suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to the claims to more clearly describe features of the present invention. Specifically, amendments were made to the claims to more clearly recite that the present invention is directed to a distribution server and a terminal device as recited, for example, in independent claims 1 and 5.

Claims 1 and 3

The present invention, as recited in claim 1, provides a distribution server. The distribution server includes an input unit that inputs image data, and a monitoring trigger information generating unit that generates monitoring trigger information, and that performs a receiving bit rate monitoring at a receiving side. The

distribution server also includes an image data reconstruction unit that reconstructs the image data and the monitoring trigger information, and a communication unit that transmits and receives data to and from a terminal through a communication path. The distribution server further includes a bit rate switching control unit that controls the image data reconstruction unit to change an image bit rate.

According to the present invention, the image data reconstruction unit inserts the generated monitoring trigger information into image data input through the input unit. Also according to the present invention, the communication unit transmits a data fragment, which includes the image data, the monitoring trigger information, and data size information of the data fragment for detecting a completion of the receiving bit rate monitoring. Furthermore, according to the present invention, when the communication unit receives an image bit rate switching request command from the terminal, the bit rate switching control unit controls the image data reconstruction unit to change an image bit rate by changing an image size. The prior art does not teach or suggest all of these features.

The above described features of the present invention, as now more clearly recited in the claims, are not taught or suggested by any of the references of record. Specifically, the features are not taught or suggested by either Patel or Fichou, whether taken individually or in combination with each other.

Patel teaches a system and method for determining network conditions. However, there is no teaching or suggestion in Patel of the distribution server as recited in claim 1 of the present invention.

Patel discloses a system and a method for determining network conditions. The system includes a server computer and a client computer. The server computer is configured to transmit data packets comprising a data object from the server

computer to the client computer. The client computer includes a transmission latency detector and a transmission bandwidth detector. The transmission latency detector uses transmission time and receipt time values to determine the changes in time it takes selected portions of the data object to be transmitted from the server computer to the client computer. The transmission bandwidth detector uses identified back-to-back data packets to determine the transmission bandwidth between the server computer and the client computer.

One feature of the present invention, as recited in claim 1, includes an image data reconstruction unit that reconstructs the image data and the monitoring trigger information. Patel does not disclose this feature. For example, Patel does not teach or suggest reconstructing both the image data and the monitoring trigger information, in the manner claimed.

To support the assertion that Patel teaches reconstructing image data, the Examiner cites Fig. 4, items 426 to 404. More specifically, the Examiner suggests that the adjustment of the transmission bandwidth is equivalent to reconstructing the image data, "as a change of the data rate of the image data is equivalent to reconstruction." To support the assertion that Patel teaches generating monitoring trigger information, the Examiner cites column 10, lines 5-25, suggesting that where the identifier is inserted in the header is equivalent to generating monitoring trigger information. However, neither the cited text nor any other portion of Patel, teaches or suggests reconstructing the monitoring trigger information, in the manner claimed.

Another feature of the present invention, as recited in claim 1, includes where the communication unit transmits a data fragment, which includes the image data, the monitoring trigger information, and data size information of the data fragment for detecting a completion of the receiving bit rate monitoring, and where when the

communication unit receives an image bit rate switching request command from the terminal, the bit rate switching control unit controls the image data reconstruction unit to change an image bit rate by changing an image size. Patel does not disclose this feature.

For example, Patel does not teach or suggest where when the communication unit receives an image bit rate switching request command from the terminal, the bit rate switching control unit controls the image data reconstruction unit to change an image bit rate by changing an image size. In Patel, the client computer 112 records the length of time between receiving the first data packet and receiving the second data packet (column 10, lines 47-49). To determine this time, the transmission bandwidth detector 206 may request a timestamp from the operating system, which executes on the client computer 110 (column 10, lines 49-52). For example, the timestamp associated with the receipt of the first data packet may be 192 milliseconds, and the timestamp for the second data packet may be 303 milliseconds. In this example, the length of time between receiving these two data packets (or second data packet receipt time) is 111 milliseconds (column 10, lines 42-57). After recording the length of time between receiving the first data packet and receiving the second data packet, the client computer 112 records the size of the second data packet (column 10, lines 58-59). This is quite different from the present invention, where when the communication unit receives an image bit rate switching request command from the terminal, the bit rate switching control unit controls the image data reconstruction unit to change an image bit rate by changing an image size. That is to say, Patel does not teach or suggest changing an image bit rate by changing the image size, as in the present invention.

Therefore, Patel fails to teach or suggest "an image data reconstruction unit

that reconstructs said image data and said monitoring trigger information" as recited in claim 1.

Furthermore, Patel fails to teach or suggest "wherein said communication unit transmits a data fragment, which includes said image data, said monitoring trigger information, and data size information of said data fragment for detecting a completion of said receiving bit rate monitoring, and wherein when said communication unit receives an image bit rate switching request command from said terminal, said bit rate switching control unit controls said image data reconstruction unit to change an image bit rate by changing an image size" as recited in claim 1.

The above noted deficiencies of Patel are not supplied by any of the other references of record, namely Fichou, whether taken individually or in combination with each other. Therefore, combining the teachings of Patel and Fichou in the manner suggested by the Examiner still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

Fichou teaches a network capacity planning based on buffers occupancy monitoring. However, there is no teaching or suggestion in Fichou of the distribution server as recited in claim 1 of the present invention.

Fichou discloses a method and a system of network capacity planning for use in a high speed packet switching network. The network includes a plurality of switching nodes interconnected through a plurality of communication links, where each of the switching nodes includes means for switching packets from at least one input link to at least one output link. Each of the output links is coupled to at least one buffer in the switching node for queuing packets before they are transmitted over the output link. In each of the switching nodes and for each of the output links, a time distribution of the occupancy of each buffer during a predetermined

monitoring time period is measured, and stored in a centralized memory location. Then, the buffer occupancy time distribution data are retrieved from the centralized memory location in all the switching nodes, gathered and stored in a network dedicated server. These buffer occupancy time distribution data for all the nodes are transmitted from the dedicated network server to a network monitoring center. In the network monitoring center, the buffer occupancy time distribution data are integrated on a larger time scale, and stored. Finally, the integrated buffer occupancy time distribution data are used to apply network capacity planning actions to the network resources.

One feature of the present invention, as recited in claim 1, includes an image data reconstruction unit that reconstructs the image data and the monitoring trigger information. Fichou does not disclose this feature, and the Examiner relies on Fichou for merely teaching a data fragment which includes data size information.

Another feature of the present invention, as recited in claim 1, includes where the communication unit transmits a data fragment, which includes the image data, the monitoring trigger information, and data size information of the data fragment for detecting a completion of the receiving bit rate monitoring, and where when the communication unit receives an image bit rate switching request command from the terminal, the bit rate switching control unit controls the image data reconstruction unit to change an image bit rate by changing an image size. Fichou does not disclose this feature.

For example, Fichou does not teach or suggest where when the communication unit receives an image bit rate switching request command from the terminal, the bit rate switching control unit controls the image data reconstruction unit to change an image bit rate by changing an image size, as in the present

invention, and the Examiner relies on Fichou for merely teaching a data fragment which includes data size information.

Therefore, Fichou fails to teach or suggest "an image data reconstruction unit that reconstructs said image data and said monitoring trigger information" as recited in claim 1.

Furthermore, Fichou fails to teach or suggest "wherein said communication unit transmits a data fragment, which includes said image data, said monitoring trigger information, and data size information of said data fragment for detecting a completion of said receiving bit rate monitoring, and wherein when said communication unit receives an image bit rate switching request command from said terminal, said bit rate switching control unit controls said image data reconstruction unit to change an image bit rate by changing an image size" as recited in claim 1.

Claims 5-10 and 13

The present invention, as recited in claim 5, provides a terminal device. The terminal device includes a communication unit that receives a data fragment from a distribution server through a communication path, where the data fragment includes an image data, a monitoring trigger, and data size information. The terminal device also includes a reproducing unit that reproduces the received image data, and a monitoring unit that monitors a receiving bit rate of the received data fragment. Furthermore, the terminal device includes an analysis unit that analyzes the received data fragment.

According to the present invention, the analysis unit extracts the monitoring trigger from the data fragment and reads out the data size information from the data fragment. Also according to the present invention, the monitoring unit calculates a

receiving bit rate based on the data size information, and a time between a receiving start time of the data fragment specified by a monitoring trigger included in the previous data fragment and a time when receiving of the data fragment finishes specified by the data size information. Furthermore, according to the present invention, the monitoring unit feeds distribution bit rate switching information of the image data through the communication unit in response to the receiving bit rate to be monitored. The prior art does not teach or suggest all of these features.

The above described features of the present invention, as now more clearly recited in the claims, are not taught or suggested by any of the references of record. Specifically, the features are not taught or suggested by either Patel or Fichou, whether taken individually or in combination with each other.

As previously discussed, Patel teaches a system and method for determining network conditions. However, there is no teaching or suggestion in Patel of the terminal device as recited in claim 5 of the present invention.

One feature of the present invention, as recited in claim 5, includes where the monitoring unit calculates a receiving bit rate based on the data size information, and a time between a receiving start time of the data fragment specified by a monitoring trigger included in the previous data fragment and a time when receiving of the data fragment finishes specified by the data size information. Patel does not disclose this feature.

According to the present invention, the monitoring unit can hold only a period in which the data being burst transferred reaches the receiving terminal. Thus, the measurement accuracy of the receiving bit rate can be improved and an accurate image bit rate switching control can be performed because no measurement is conducted at a time other than the burst transferring period in which the data is not

reached, as compared with a technology for measuring a predetermined time, for example (*see, e.g.*, page 26, line 7 to line 13 of the specification filed on October 2, 2003).

As previously discussed, Patel teaches where the client computer 112 records the length of time between receiving the first data packet and receiving the second data packet (column 10, lines 47-49). To determine this time, the transmission bandwidth detector 206 may request a timestamp from the operating system, which executes on the client computer 110 (column 10, lines 49-52). For example, the timestamp associated with the receipt of the first data packet may be 192 milliseconds, and the timestamp for the second data packet may be 303 milliseconds. In this example, the length of time between receiving these two data packets (or second data packet receipt time) is 111 milliseconds (column 10, lines 42-57). After recording the length of time between receiving the first data packet and receiving the second data packet, the client computer 112 records the size of the second data packet (column 10, lines 58-59). This is quite different from the present invention.

In the present invention, the monitoring unit calculates a receiving bit rate based on the data size information, and a time between a receiving start time of the data fragment specified by a monitoring trigger included in the previous data fragment and a time when receiving of the data fragment finishes specified by the data size information. On the other hand, Patel discloses where the size of the second data packet is recorded after recording the length of time between receiving the first data packet and receiving the second data packet. The size of the second data packet and the time information are used to calculate bandwidth. In this way, the size of the second packet in Patel is not used for the detection of a completion of

the receiving bit rate monitoring. Accordingly, Patel does not teach or suggest achieving an improvement in a measurement accuracy of the receiving bit rate, as in the present invention.

Therefore, Patel fails to teach or suggest "wherein said monitoring unit calculates a receiving bit rate based on said data size information, and a time between a receiving start time of said data fragment specified by a monitoring trigger included in the previous data fragment and a time when receiving of said data fragment finishes specified by said data size information" as recited in claim 5.

The above noted deficiencies of Patel are not supplied by any of the other references of record, namely Fichou, whether taken individually or in combination with each other. Therefore, combining the teachings of Patel and Fichou in the manner suggested by the Examiner still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

As previously discussed, Fichou teaches a network capacity planning based on buffers occupancy monitoring. However, there is no teaching or suggestion in Fichou of the terminal device as recited in claim 5 of the present invention.

One feature of the present invention, as recited in claim 5, includes where the monitoring unit calculates a receiving bit rate based on the data size information, and a time between a receiving start time of the data fragment specified by a monitoring trigger included in the previous data fragment and a time when receiving of the data fragment finishes specified by the data size information. Fichou does not disclose this feature, and the Examiner relies on Fichou for merely teaching a data fragment which includes data size information.

Therefore, Fichou fails to teach or suggest "wherein said monitoring unit calculates a receiving bit rate based on said data size information, and a time

between a receiving start time of said data fragment specified by a monitoring trigger included in the previous data fragment and a time when receiving of said data fragment finishes specified by said data size information" as recited in claim 5.

Both Patel and Fichou suffer from the same deficiencies, relative to the features of the present invention, as recited in the claims. Therefore, combining the teachings of Patel and Fichou in the manner suggested by the Examiner does not render obvious the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection of claims 1, 3, 5-10 and 13 as being unpatentable over Patel in view of Fichou are respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claims 1, 3, 5-10 and 13.

In view of the foregoing amendments and remarks, Applicants submit that claims 1, 3, 5-10 and 13 are in condition for allowance. Accordingly, early allowance of claims 1, 3, 5-10 and 13 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (referencing Attorney Docket No. 501.43083X00).

Respectfully submitted,

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